POTENTIAL TOPICS FOR TRIENNIAL REVIEW
Short Descriptions

BACTERIA. Bacteria criteria to protect recreational uses are set forth in Idaho's water quality rules in three disparate sections (see inset). Although all three are related, these sections lack adequate cross-references and consistency. This has caused some confusion in the relation of geo-mean and single sample values of *E. coli*, particularly in application to point sources.

Applies to:
- Section 251 - Surface Water Quality Criteria for Recreational Use Designations: *geo-mean criteria*
- Section 420 - Point Source Sewage Wastewater Discharge Restrictions: *disinfection requirements*
- Section 080.03 - Violation of WQS, E. Coli Standard Violation: *use of single sample values*

As a result, municipal wastewater discharge permits may call for unnecessary steps to disinfect water prior to discharge. In addition, current monitoring requirements go beyond what is needed to obtain a valid 30-day geometric mean and can be onerous for small, publicly owned treatment works. Finally, the language regarding public swimming beaches leaves it unclear that the same geometric mean as for primary contact recreation applies. DEQ plans address bacteria in rulemaking slated for the spring of 2005

Applies to:
- Section 070.06 - Application of Standards to Intermittent Waters
- Section 300 - Gas Supersaturation

FLOW AND APPLICATION OF STANDARDS. ***Intermittent waters*** usually only flow at the surface for part of each year (a week to several months). ***Ephemeral waters*** flow only briefly, generally in direct response to precipitation or snowmelt. As these streams naturally dry up, their water quality becomes unusual. Water quality can also be unusual during flood flows.

Current rules allow that numeric criteria only apply to intermittent waters when flow is optimum to support a water body's designated uses. The thresholds provided for optimum flow may not be best for all sizes of streams. Ephemeral waters are not specifically mentioned, nor are the rules explicit about how flow manipulations are to be considered in judging a water's hydrologic character. Presently, the rule language regarding gas supersaturation and intermittent waters are in disparate sections of the rules, even though both deal with application of standards as affected by flow.

MIXING ZONES. Mixing zones are limited areas associated with point source discharges in which water quality standards may be exceeded. These zones have traditionally been key to balancing opposing aims (e.g. economics of wastewater treatment versus protection of aquatic life) and have become a key consideration in Endangered Species Act consultation on Idaho's toxics criteria.

Applies to: Section 060 – Mixing Zone Policy

Questions revolve around default sizes for mixing zones: whether they can be larger or should be smaller in some situations, whether some pollutants should be treated differently, how rigorous an analysis is or should be required to justify a mixing zone.

Applies to:
- Section 250 - Surface Water Quality Criteria for Aquatic Life Use Designation
- Section 401.03 - Point Source Wastewater Treatment

TEMPERATURE. Water temperature is fundamentally important to aquatic life; it is also naturally quite variable. Idaho's subcategories of aquatic are defined by temperature. These include cold water (including further subcategories for salmonid spawning and bull trout), seasonal cold water, and warm water.

Idaho has long recognized and experienced difficulty in applying its current temperature criteria. In April 2003, EPA issued guidance that sets forth new criteria based on a new use structure for waters designated for aquatic life use. The issue before Idaho is whether to adopt EPA's recommendations or craft an alternative. This is a controversial topic, because many think current criteria are not protective enough, especially for threatened and endangered salmon, while many others think current criteria are unattainable and thus overprotective. DEQ also sees other issues related to temperature: 1) Are temperature increases in the winter are critical as during the summer, and, if not, should point source wastewater treatment requirements vary accordingly? 2) There is a lack of clarity in whether the allowed 0.3°C increase above natural is a cumulative limit and applies to non-point sources as well a point sources.

TOXICS. Idaho's toxic criteria were first adopted in 1994, based on mid-eighties criteria guidance. Although some updates were adopted by the Idaho legislature in 2005, many of the toxics criteria remain behind the times, out of step with current scientific understanding.

Applies to Section 210 - Numeric Criteria for Toxic Substances for Waters Designated for Aquatic Life, Recreation, or Domestic Water Supply Use

While beginning Triennial Review, DEQ is also proposing a major update to its toxics criteria in rulemaking that will begin in the spring of 2005. This update will bring the criteria set to protect human health in line with current science as expressed in EPA's 2002 national recommendations. But other toxics issues will remain. In addition, EPA is working on new criteria recommendations for copper, silver and selenium. The copper criterion is out in draft and involves a new method of formulating criteria, known as the *biotic ligand model* (BLM). The BLM predicts toxicity based on a number of other chemical characteristics of water that modify toxicity. For selenium, EPA is poised to recommend a fish tissue criterion.

Applies to Section 250 – Surface Water Quality Criteria for Aquatic Life Use Designations

DISSOLVED OXYGEN. Idaho's minimum dissolved oxygen criteria date back to the 1980s or before. Though more stringent than EPA's current, but dated, recommendations, the DO criteria have

come under question for their protectiveness of fish, especially threatened and endangered salmon. Oregon has adopted nominally more stringent criteria, and there is pressure on Idaho to follow suit.

Although some believe that the current criteria are adequately protective, EPA, NOAA Fisheries and the Fish and Wildlife Service would like Idaho to adopt Oregon's criteria, which are thought to be more protective of threatened and endangered fish. There may be merit in additional metrics for DO criteria (e.g. adopting a seven-day average criterion in addition to a minimum value), coupling all the fixed numeric criterion with a percent saturation limit (as is currently done for salmonid spawning only), and specifying minimum monitoring requirements.

Applies to Section 051 – Antidegradation Policy

ANTIDEGRADATION. DEQ has been evaluating its policy on antidegradation and may develop guidance to clarify and expound on the current policy stated in the rule. This may include more clarity regarding the definition of public process, expounding on the important economic and social development considerations, and specifying tracking/ reporting requiurements. DEQ is also examining the range of sources/activities that the antidegradation policy may apply to. As this evaluation moves forward, it may be that rule making is required in place of, or in addition to, antidegradation guidance.

Applies to Section 200 – General Surface Water Quality Criteria

NUTRIENTS. Nutrients are necessary for growth and reproduction of aquatic plant life that are the foundation of aquatic food chains and fish production. There can, however, be too much of a good thing.

Idaho's current nutrient criteria are narrative and state that "surface waters in the state shall be free from excess nutrients that can cause visible slime growth or other nuisance aquatic growths impairing designated beneficial uses." This language usually requires site-specific interpretation on a case-by-case basis. EPA has been working for several years on a national initiative to encourage all states to adopt numeric criteria. Specifically, EPA has proposed numeric criteria for two ecoregions applicable to Idaho but has encouraged states to refine their recommended criteria. DEQ is in the process of examining EPA's proposal in terms of how well it works in Idaho, while gathering and examining Idaho specific data so as to explore refined numeric criteria as alternatives to EPA's recommendations.

USES & USE DESIGNATIONS. The uses for which waters may be protected in Idaho are defined in Section 100 of the rules. Specific waters are then designated for protection of various uses in the following sections, according to a system of water body identification numbers. Many waters are not currently designated, largely because a change in scale for tracking them "created" many new waters whose use potential has been unexamined and thus unassigned.

Applies to:
- Section 100 - Surface Water Use Designations
- Sections 110 through 160 – Waterbody Specific Use Designations

These waters are said to have presumed uses (cold water aquatic life and primary and secondary contact recreation) for which they are protected by default. In addition many use designation of the past were broadly applied and transferred to new water bodies. It would be prudent to determine whether these default presumptions and old designations are indeed appropriately protective. There is also a need to "catch up" on assigning uses to undesignated waters. In the process, it may be advisable to refine or revise Idaho's system of beneficial uses: new use categories may be needed (e.g., ephemeral aquatic life, limited aquatic life), and EPA's regional temperature criteria guidance recommends an alternate system of uses (e.g. salmonid migration, salmonid rearing).

Applies to:
- Section 003 - Definitions
- Various other sections throughout Chapter 58.01.02

DEFINITIONS/ MISCELLANEOUS. Many key terms used in the rules are defined early on, but some are not, others are outdated, and some are redundant. For example, "hypolimnion" could be better defined so as to allow for moderately stratified conditions (or perhaps augmented with a separate definition of *stratified*).

Throughout the water quality rules, there are numerous cross-references. As the rules are revised again and again over the years, these cross-references have become, in cases, confusing or broken. General "housekeeping issues" related to missing or convoluted cross-references, outdated incorporation by reference, redundant and sometimes inconsistent sections, and/or easily misinterpreted language, could also be addressed. Some have even suggested a total rewrite of the water quality rules could substantially improve their clarity and even make them more concise.